CalPERS ASSET LIABILITY MANAGEMENT WORKSHOP
SEGMENT 6

**Date:** November 9, 2010
**Segment:** Asset Liability Management Workshop
**Host:** Chairman George Diehr
**Guests:** Joseph Dear, Farouki Majeed, Jay Jeong

George Diehr:
Before we launch, we've had some side discussions out here. We are, we're going to want to give you some, you know, requested analyses. I mean, it will include things like relaxing constraint on treasuries, increasing constraint on commodities. I'm sorry. Not commodities. The infrastructure and forestland. So we can talk about those and, certainly not a long list, but, and but it's something that's thought out. And then take a look at those maybe before the November, or, at the November board meeting. Maybe a time there. Does that seem feasible? Do we?

Several board members speaking, talking over each other.

George Diehr:
Yeah. I guess what we'd like to do is have a little time to. Yeah. But we'd like to. Yeah. But. We'd like some time to, you know, maybe you can get an early mailing out so we have time to consider it before. So we don't get it just right before the meeting. So that, in any event, so we're moving ahead with this exercise, but the point is when this gives all of us a sense of where the board is on risk return issues, but wherever we land today should not be considered the sort of final solution, the final answer.

J J Jelincic:
And, if it is (indiscernible).

George Diehr:
Yeah. And we can't really, we can't formally vote on it today, but, the exercise will give us a good sense of what, really, I think a risk return tradeoffs be the same.

J. J.?

J J Jelincic:
As we go into this drill, you know, there's some assumptions built into these numbers and I think people need to think about them. One, the market assumptions that were on Slide Two are cooked into it. So we've assumed a new normal with lower returns going forward. We, we have assumed that the new normal risk return relationship is equal to the historical risk return relationship rather than the risk return relationship we went through, through the last ten years. So those are kind of cooked in and I think they, people need to at least be aware that they're in there. And then when, one of the things I will point out is when they were talking about Page, uh, Slide 11 on the previous one, they

made the comment that markets have the unfortunate practice of paying no heed to expectations. And, so as we go through this drill we should be aware of that as well.

George Diehr:
Okay.

Farouki Majeed:
So, Dr. Diehr, on your, on your preceding comments. So our intention is to come back in December with some alternate, huh. The practice, as I recall, the last time was the same as that at the end of the workshop we got some directions based on what was the preference and then we came back in December with some alternatives around that range, as well. So, that, that's what we intend to do. But.

George Diehr:
Yeah.

Farouki Majeed:
Let's see how it goes and then we can discuss and get your input …

George Diehr:
Yeah, I'm just interested in, you know, maybe you could get things out to the board members before the regular mailing so that people have time to look at it and discuss at their briefings and so on so they can absorb it.

Farouki Majeed:
Okay. So, moving onto this section is the, is the final part of this workshop where committee members will have to, will have an opportunity to indicate their risk preference based upon the decision factor framework that was discussed yesterday. You can spend some additional time on that today as we go along. So, what we're going to do now is, first of all, get you familiar with the tool that you are going to be using. You'll have a clicker in front of you. And then you'll also have the two sheets that show the decision factors and the portfolios so that you don't have to go back to your book, you have these separate sheets that you can refer to. And then we are going to sort of first demonstrate three cases. One is the conservative case. One is the moderate or the middle case. And the other one would be the more aggressive case in terms of risk and return. So that you understand the three, the outlines in the middle case, and then thereafter we will have the board.

So, with that, Rick Roth and Jay Jeong there is going to be operating the machine. There's a little bit of time lapse between your preference and then how that's calculated and the rank order preference is shown on the screen. So, that would be about a minute or so. So, and, (indiscernible) your indulgence during that period. But I just want to let you know how this proceeding going to work. If you have no question, you know, otherwise we'll proceed.

George Diehr:
Okay. So. I guess. There was another sheet which says a one equals five and a two equals ten and so forth. And, so, for.

Richard Roth:
Let me.

George Diehr:
I'm sorry. It's hard to believe it's (indiscernible). Yeah. Okay. Page 3 and 4. And. Oh. Of portfolio selection. Portfolio selection by committee. And. Okay. So we just, we just vote on one and three, then? Right? That's what we're going to do?

Farouki Majeed:
Yes. Yes.

George Diehr:
Yeah. Okay.

Farouki Majeed:
You would vote on one and three. So, first will be the demonstration. And then after that we will turn it over to Rick Roth.

Richard Roth:
Yeah. Let me talk through the process a little bit first before we completely launch into it. So, we can see on this slide the first column actually represents the buttons on your clicker. So there's nine buttons to select from. The second button represents, the second column represents the value that will be assigned to Decision Factor One. When you click that particular button. So, for instance, if you select button two you're going to assign a weight of 10% to Decision Factor One. And then the system will assign a weight of 40% to Decision Factor Two. And I am not sure if this question was asked already, but I'm, if not, I'm anticipating the question of, well why can't we vote a full 50% on Decision Factor One? And the answer is, that the most straight forward way to use this technology is to just use nine buttons. So, we're restricted to five to 45% to do it. So, that's why we're doing it that way. And then.

So, just advancing to the next slide. Okay. Basically, this is Decision Factor Three and it's, again, the same thing. So, nine buttons to select from and it's important to note that if you're selecting any of the buttons one through four, what you're doing is you're favoring the more conservative candidate mixes. If you select button five, you are selecting more of a balanced approach. If you're selecting buttons, any of buttons six through nine, then you're favoring the more aggressive or return oriented candidate mixes. So, with that, why don't we begin the process. So, the first step is you should all have an envelope. And, in that envelope is your clicker. So, let's open the envelops, if you haven't already done that. We're all there. Good. Okay. You're ahead of me. So, when you select a button, the way you know that you've actually selected a button is you're going to see a small green light in the upper right hand corner light up. And then you should see the number of the button you selected in the LCD display.

So, at this point, do we have any questions before we do the first demonstration session?

Farouki Majeed:
Also, it's good to mention that it's, the system will recognize only one click. So, once you hit the button and you see the green light, that's the one that will be recognized. If you click again, it's not able to recognize it. Okay. So.

J J Jelincic:
So you can't change your mind?

Farouki Majeed:
Yeah, not during the process. But. So that's why we wanted you to get familiar with the instrument.

Richard Roth:
Yeah. Don't click quite yet. We have to open the system to open the polling for Demo Session One. So, Jay is working on that now. And then. Yeah. So what we're going to do in Demo One, this is going to be the balanced approach. So what we're all going to do is, is select button number five.

Priya Mathur:
Right now?

Richard Roth:
Not yet. Not until Jay gives me the thumbs up. You ready?
Okay. So, at this point everybody click on button number five. And then we're going to watch and see that …

Farouki Majeed:
Ten responses.

Richard Roth:
All ten responses. Okay. And now we can close it. And that was for Decision Factor One. And, and correspondingly two. Okay, so now we can vote again for Decision Factors Three and Four.

Farouki Majeed:

Press five again, right?

Richard Roth:
Five again. All right. So we've got ten. Right? Good. So now we're going to close the system. And then what the system does is it has to aggregate those responses. And then Jay then copies those aggregated results into the candidate preference model. Which then serves to rank the candidate mixes. And we'll see a summary screen which shows, it's going to show the consensus decision factor weights. It's going to show the individual selections, and then it's going to show the rankings of the various candidate mixes. And that should come up shortly. So then, as Farouki explained, after we do the first session, then we're going to move ahead and we're going to do an aggressive vote, return oriented, and then we're also going to do a conservative just to see the sensitivity.

Here we have the result. And we can see that everybody pressed button five in both instances. So we have an exact balance weight here of 25% applied to each of the four decision factor. So, now lets bring up the weighting. All right. So now we see the weighting. And we have the top three are candidate mixes three, six and eight. So what we, what we have here is a balanced result. So, candidate three is one of the more conservative mixes. Candidate six is a bit more in the middle. And candidate eight mixes the most aggressive. So what we've achieved by doing a balanced vote is we've gotten a cross section really of the risk return possibilities here.

Do we have questions, at this point?

J J Jelincic:
If it were really balanced, why is it not, you know, one to five (indiscernible 00:12:59). I mean, it seems to me that you've taken the most aggressive of the conservatives, the most aggressive are the ones in the middle and the most aggressive of the aggressives?

Richard Roth:
Right. It's because of there's some, there's randomness in the process because this is all based on the simulations. And, also the fact that we used two return distributions. We used the base case as well as the, we used the 30% weak growth case to model. This is your factors two and four. So, what you're describing kind of makes sense. If the entire process was perfectly linear between risk and return, but it's not.

J J Jelincic:
Okay.

George Diehr:

And, and rank one is the best, right? I mean, it almost looks like seven and eight would be where. I would expect four and five to be high in the middle, but. One is not best, right?

Farouki Majeed:
Yeah, one is not best.

Richard Roth:
It's not best, at this point.

George Diehr:
No, no, no. Rank Number One. Three is the top?

Farouki Majeed:
Yes. Three is the top.

George Diehr:
Not.

J J Jelincic:
Oh, oh. Well.

George Diehr:
That's what I mean. It looked like. As J. J. is saying, intuitively you might think portfolios four and five kind of in the middle would be top rank. They're bottom rank. I just want to make sure.

Richard Roth:
Right. Right.

George Diehr:
Like the, you know, it could be, some of say 95$^{th}$ percentile is terrible, some say it's wonderful.

Richard Roth:
Yeah, yeah, yeah.

George Diehr:
Okay. Okay.

Richard Roth:
In this case Portfolio Three came out ranked at the top.

George Diehr:
Yeah. Okay.

Richard Roth:
But the other, the other thing to notice here is that the preference scores are not that far apart. So that's why I told you …

George Diehr:
Oh, yeah.

Richard Roth:
That's why it's a little, it seemed a little bit scrambled. Is that there's no, there's no real clear distinction here.

George Diehr:
Uh-huh.

Richard Roth:
Which, which you kind of expect, because we did an equal weight. If you do an equal weight, the model's not going to give you a clear cut answer. So, anymore questions, at this point? Before we move onto, to go to an aggressive selection? Okay. So, Jay, let's reset it. Now I'll note that all this work was done in house. So we saved some money.

So I'd like to thank Jay for doing a lot of work. And, also, and also Deanne with the clickers to arrange all this for us. Okay, so polling is open now for Decision Factor One. Again, this is the aggressive selection. So let's all press button nine.

Farouki Majeed:
Above the question mark.

Richard Roth:
Right. So we've got our ten responses. We can close. Okay, now we're open for Decision Factor Three. Let's again press button nine. One left. Just one left.

Farouki Majeed:
You need one more (indiscernible).

Priya Mathur:
Why don't we all just press nine again?

Richard Roth:
All press nine again. There we go. We've got it. All right. So we can close it again. And so, again the system is going to aggregate the results. And then Jay will copy it over to the preference model. So, what we should see is that in the summary content is waiting. Decision factors one and three should receive a 45% weight. Two and four should be 5%. And we'll see the higher returning mixes being highest ranked.

Farouki Majeed:
Wish we had some music. Interlude period would be (indiscernible) …

Richard Roth:
Okay, so we're seeing the 45, five, 45, five, as expected. Okay, and now we see highest ranked are as eight, then seven, then six. And the other thing to note is, is now we've got more dispersion or difference in the actual preference scores. So the model is actually, it's discriminating now between the different mixes based on the preference you assigned to each decision factor. So it's really doing what it should be doing.

And we're also showing for each mix the related expected return at risk up to the side. So, do we have any questions at this point? Based on this round?

George Diehr:
Let's get real. I mean, I don't think we have to set one and (indiscernible).

Richard Roth:
Okay. Should we just go?

George Diehr:
We've got it. We've got it.

Richard Roth:
All right, we've got it.

All right, let's reset it. Yeah, just don't go yet.

Farouki Majeed:
I think you have to wait for this in sink.

Unknown speaker:
All right, he's got it.

Richard Roth:
Okay. Not yet. Yeah, we're not ready quite yet. Okay, so we're ready to go and this is real. This is not a practice session. So, put in your preference. And this is Decision Factor One. Which is to improve funding. Okay, we're done with that one. So we're going to close one. And move onto three, but don't go yet. Okay, now we're ready for three. So, once again, this one is to minimize employer contributions. Yeah, let's all press nine, or whatever you wanted to do. I'm not going to anticipate here. This is, this is you. Still missing one. There we go. There we go. All right. So now we're going to close it.

Farouki Majeed:

Sometimes it seems like a long time.

Richard Roth:
Yes.  It's thinking.

Farouki Majeed:
Oh.

Richard Roth:
Okay.  Here we are.  All right, so we've got 40%, eleven, 37 and 13.  All right.  I think we have a rounding situation with the 40% and eleven.

Farouki Majeed:
Just (indiscernible 00:21:57) that bracket.

Richard Roth:
Yeah, that's show, that's the other, that (indiscernible) mixed ranking now.  All right, so rank one is candidate eight.  And then six and seven.

George Diehr:
So, go ahead.  Henry?

Henry Jones:
Yeah.  Okay, so, looking at this data and I'm trying to assess my tolerance for risk.  So I know what my number is, so I could look up there and I can see where my rank.  In order to see how I faired with where we ended up, I just compare my rank with the numbers at the top?

Richard Roth:
Right.

Henry Jones:
Okay.

Richard Roth:
Right.  The top is a consensus.

Henry Jones:
And that tells me where I am?  Okay.

Richard Roth:
Relative to everybody else.  So, everybody, you know, looking at your number, knowing your number, knows where you are.

Henry Jones:
Okay.

Farouki Majeed:
We could also see the individual numbers on the (indiscernible 00:22:54) here. So, we …

Henry Jones:
Joe just pinched my number so it doesn't count.

George Diehr:
No, no, no. I just wanted to figure out which person you were. Oh, and you voted wrong.

Farouki Majeed:
So, huh. So you don't know who the ten number, you know who you are. So if you, at the back of your …

Richard Roth:
So, what I'm seeing here is a fairly consistent voting on Decision Factor One. You know, it's, it's 35% to 45%.

Decision Factor Three. Fairly consistent, as well. We've got one somewhat lower. But in general what we've got here is an expression that we want to be more return focused in our selection.

Farouki Majeed:
I think, at this point, we could look at Portfolio 8. Right? Is what you, the, the, is sort of ranked here. And talk about that portfolio and it's attributes and see, uhm, are you comfortable with that, and do you want to, do you have any questions, you have any directions for us in terms of looking at that? With so many adjustments, or peaks, or anything like that.

George Diehr:
Yeah, there's some in, I don't know if I call it adjustment to that, but we, there has been an interest expressed in, I think, relaxing the treasury, liquidity constraint, look at a model that does that. And probably combined with, huh, raises the constraint on the infrastructure. Where is that. Oh, yeah. And, real. Raising the constraint on infrastructure.

Farouki Majeed:
And, real estate.

George Diehr:
Up a couple, up a couple. Yeah. At least up a couple percent. And, removing the lower bound on the treasuries.

Priya Mathur:

George, I have a question.

George Diehr:
Any others? Yes.

Priya Mathur:
Just, so just to be clear, this reflects expectations over ten years, correct? And, not three years? So, one of the things that you had mentioned was that the reason why the constraint on real estate and infrastructure was where it was in terms of max was, it's your ability to implement that.

George Diehr:
Yeah.

Priya Mathur:
So, is that your ability to implement that over three years or over ten years?

Farouki Majeed:
Over three years.

Priya Mathur:
Over three years. So, is it realistic to assume that we could invest, go higher than 3% in infrastructure in three years?

Farouki Majeed:
In infrastructure, I think, uhm.

George Diehr:
Where are we now?

Priya Mathur:
We're at one percent right now.

Joseph Dear:
Could it be done? Yes.

Priya Mathur:
Could it be done well?

Joseph Dear:
Well, that's the real issue. I mean, you could go into a listed infrastructure funds, the LMP's, you could sign up for more of the bank sponsored infrastructure funds, which we have heretofore avoided with one exception. So you gain the exposure. Part of it is how fast the market in the U.S. develops for a public private partnership. It's been very slow to develop. It's not absolutely clear how that will unfold. But, if it does become more rapidly available, or assets become

available, depends on how we build out the staff skill set. Our plan (indiscernible 00:26:44) a mix in the early years of funds and directs, but over time going to more direct because the economics are better. But, if we expanded the staff capacity, it also depends on our ability to collaborate with other funds, which is an area we've been exploring. So there are a lot of variables here. It doesn't mean we couldn't run a simulation.

Priya Mathur:
And, doing consistent with … policy.

Joseph Dear:
Same old what if. But, three years, maybe not a huge amount of expansion. Ten years is a long time for to implement an investment program.

Priya Mathur:
Yeah. I guess that's what I'm concerned …

George Diehr:
But the return, so, let's say we put it at 5%. I, I, we would begin realizing that return at some future point. Before. We'd start realizing some of that return before, before ten years. I mean, this is, it seems a little bit apples and oranges if you say what can we do in three years, and yet this is a ten year projection. That's my.

Farouki Majeed:
So. May I make a comment here, Dr. Diehr?

George Diehr:
Uh-huh.

Farouki Majeed:
As you might recall, when we started off with the ILAC asset class the last time we went from zero to five.

George Diehr:
Yeah.

Farouki Majeed:
And, so when you do that and you're, instantly you're out of sink with your policy because you don't have the 5% allocated. Right? So one of the things we did at that time was a sort of entering … and we kind of moved it, moved it along that way. So, in order to kind of minimize the discrepancy issue, that's what you would do.

George Diehr:
Yeah.

Farouki Majeed:
So, what, can you move the post to, you know, from three to five percent over the three years? I think it's something that we'd like to think about and come back, as well, maybe when we come back to you in December. But, one thing for sure that we could do, let's get this right here. So we'll relax the liquidity. Let's say from 4% to 2% and see what that does and we can give you one or two alternatives around that and we where that goes. And, the other one.

George Diehr:
Yeah. I think even if, if you say there's an implementation problem, I think still would be of value to see what the …

Farouki Majeed:
What that looks like?

George Diehr:
… five, say 5% on the infrastructure. Yeah.

Farouki Majeed:
So we could, we would show you that as well. So.

George Diehr:
Yeah.

Farouki Majeed:
So, we can show you, you know, the …

George Diehr:
Hold on. Let's suppose that we, we land and said, okay, that's where we want to be in five years. Then you're not going to realize. Well. Even if you put it on the ground right now the return may be somewhere down the line. Cause infrastructure doesn't, it feeds back income, but. So, anyway, I think even though the implementation, putting 5% on it would not force the implementation to be done in three years. I guess is my point. It would be appropriately scheduled and phased.

And, Terry, on treasuries? You want to see, did you want to see, you want to see zero?

Terry McGuire:
Oh, zero, one percent, won't be much difference.

George Diehr:
Yeah. Well they wanted two.

Terry McGuire:
Maximum one.  No bigger.

George Diehr:
Max plus …

Priya Mathur:
Minimum one.

George Diehr:
Yeah.  Let's, let's try it at one and two, if that's fine.  Okay.  It, are there other people who would like to see other?

Unknown speaker:
One point three seven.

George Diehr:
Yeah.  Okay.  For, for 1.37.

Farouki Majeed:
I mean, I'm, I'm a little concerned about the one percent.  I will do as you direct, but I don't want to say that, you know, currently we have a 2% cash and there'll be, you know, that's.  Because you, you have to understand that we, we have to fund, we, you know, we are raising cash, every couple of months we are selling assets to raise cash.  So, you know, from our point of view one percent would be a tight find for us.  So, I would want to stick to at least two.  But, if you want to see it, we can show it to you.

George Diehr:
We want to see it.

Farouki Majeed:
Okay.

George Diehr:
Thanks.  Huh.  Henry?

Joseph Dear:
And, we'll show it to you.

George Diehr:
Okay.

Henry Jones:
Yeah.  My question goes to the inflation rate.  Over the last several months we've had presentations and I think you said there was a consensus on inflation rate

going forward. Is that consensus, does that consensus still exit with the QE-2 in terms of Wilshire, Alan and staff and others? And, if that consensus does not still exist does, what's the impact if there were changes on these outcomes?

J J Jelincic:
The other guys were quicker, Alan.

Alan Milligan:
I was trying to avoid it.

Michael Schlachter:
It's, as Yogi Berra once said, it's always very difficult to make predictions, especially about the future. But, our, in our opinion I think the outlook for inflation probably is still moderate. If anything, what QE-2 I think has reinforced is the fed is very concerned about a weak economy, potential deflation going forward, QE-2 is obviously fairly aggressive, which hopefully, hopefully, knock on wood, should prevent deflation. But, certainly if the feds saw, and they see obviously more data than we ever do, the feds saw, if the feds saw a tremendous nation deflation coming along, they wouldn't have done QE-2, or they would have begun moving in the other direction. So, if anything, this is a signal I think to the marketplace that we should expect moderate growth, moderate to poor growth, moderate to low levels of inflation for at least the foreseeable future. So I believe that the consensus inflation expectation put together at least for the next three years of sort of this, you know, very low single digits kind of number, I think, is certainly reasonable given what we're seeing in the marketplace, lifting price into tips, and, again, what we're seeing out of the fed as far as how they're reacting to the current economic environment.

George Diehr:
J J

J J Jelincic:
Well, given my confidence in the market stability to make most people wrong, when I look at Eight, I mean, one of the things that I really do become concerned is we basically have not put any kind of hedge on for inflation. And, if the consensus is wrong, then that's going to come back to bite us in the rear end big time. So I'm not sure that I, I mean, that's part of my discomfort there. And, you know, I don't know that I have the answer. But, I just want to throw that out. And, at some point, we really need to talk as a board and make a explicit discussion about whether we're really running, willing to run the maverick risk. You know, we have become super sensitive to a couple of newspapers, and, if we run the maverick risk and we're wrong, even in the short run, we're going to get hammered and we need to think about are we willing to accept that and say we believe that in the long run we will be proved right. Be willing to stand up and defend the position. I really think that it's important that we have that as an explicit discussion at some point and not simply do it by implication. I mean, but

the legislature may be able to change the law on furloughs by implication. But we shouldn't be doing that with out asset allocation and some real risks that we're running, particularly reputational risks which, I think, sometimes we're more sensitive to than investment risk.

George Diehr:
Mr. Emkin?

Allan Emkin:
Just to the first point that was raised. The new way of structuring real estate and the design of the timber and infrastructure, those are explicitly designed to be inflation hedges. Now, whether or not they play out that way you never know. They don't have the linkage that a tip does, but the intent and the construction of those asset classes were to make them inflation sensitive. That was a conscious decision.

Farouki Majeed:
May I go back to Mr. Jones' point here? Because A-8, Mr. Chairman, would, for example, we didn't put a minimum on, on commodities, for example, so A-8 would mean a zero percent to commodities, and maximum to the inflation bucket you would get one percent. When you combined ILB's (SP?) and commodities and both of those two items currently represent about two and a half percent of the portfolio. So, you know. I guess that's the point that you are making, as well, is if you went strictly to this, then it may mean downsizing from where we currently are. And it's still a very minimal position. And it doesn't really, huh, provide any meaningful hedge.

J J Jelincic:
Hedging a $100 around here doesn't mean much.

Farouki Majeed:
Yes. That's what I'm saying. It's not a meaningful, meaningful.

George Diehr:
All right.

Farouki Majeed:
So I think what, what, what we would do, as you have directed, is to relax the liquidity down to 2% and then one percent. So those would be two cases. The other is the real assets on infrastructure, forestland, sent from three to 5% and see how. So, if we give you a combination of these with a number of alternatives that we can look at.

George Diehr:
Yeah. Okay. Probably just in the, I mean, a six, seven, eight range would be better. Yeah.

Farouki Majeed:
Range of risk. Yeah.

Priya Mathur:
Mr. Chair, if I may?

George Diehr:
Yes.

Priya Mathur:
So just, just to be clear about what's going to happen in December, are you going to bring a range of portfolios that meet the A-8 volatility …

Farouki Majeed:
Yeah.

Priya Mathur:
… constraint, but might have, as you mentioned, different allocation to commodities so that we don't have to, because as a practical matter we don't really think it makes sense to reduce our exposure there. So there will be sort of a few options of what the actual allocation.

Farouki Majeed:
A few practical options.

Priya Mathur:
Practical options. Yeah.

Farouki Majeed:
Around the directions that you've given us. And your preference to be where you want to be in terms of the risk and return.

Priya Mathur:
The risk. Okay.

J J Jelincic:
And are you going to bring our toys back?

Farouki Majeed:
No.

J J Jelincic:
No.

Farouki Majeed:

At that point you're going to have talk yourself out of it.

George Diehr:
Yeah, I guess (indiscernible 00:38:33). Excuse me. Not. Andrew. Do you have anything? Would you like to comment?

Andrew Junkin:
I guess my comment is that we've all acknowledged that the assumptions reflect a certain state of the board. They certainly don't reflect all the future possible specs. And, so, the bucketing approach was designed to highlight some of the specific risks, macro risks that you all would face. And, it's Mr. Jelincic's point Alternative-8 actually reduces your inflation hedging. We've heard comments from this committee that we can't keep doing things the same way that we had. And yet Alternative-8 still has a pretty substantial exposure to grow. And, if the economy does not grow, then there could be some challenges. So, I think that, you know, the infrastructure and forestland change there is going to offer some options. I think Alan made the point earlier that the change in the structure of real estate may allow for more capital to be deployed for properties tend to be more sizeable and so there could be potential upside on the global cap there. And there's, there's some blurring of lines between the buttons. So infrastructure does have some inflation protection. It's not grouped into that inflation (indiscernible). So, and it's not a perfect situation, but I did want to point out that there's still going to be a substantial exposure to growth.

George Diehr:
Yeah.

Andrew Junkin:
As we'd hoped.

George Diehr:
I agree. And I get, part of this gets to what growth are we talking about? I mean, as Lorne talked about and, also within, well the public equity class. Well, you know, is it, so is it, well, is it emerging frontier, international. Also in that class, how have we factored in things like the expected better return for fundamental indexing, and is it 130, 30, are we, do those things figure into the assumed return? So, whatever we could glean out of those are alpha like.

Andrew Junkin:
Yeah.

George Diehr:
And would it enhance that? So we're being, we tending to be conservative for (indiscernible) straight investing in, well, worldwide markets pretty much 50/50 U.S. and not U.S. Pat, or, excuse me. Pat?

Patricia Clarey:
I just want to, and I'll look at it in December. But I'm a little concerned about moving toward the right side of the chart. Adding risk gives me, you know, some heartburn. So, you know, I'm willing to look at, you know, these new machinations, but I think we do have to be mindful that we can't assume that only good will happen and no bad, and that's kind of where I feel like this conversation is going. And I think we have a responsibility to our members to not build promises that we can't keep.

George Diehr:
Okay. Joe? Priya?

Priya Mathur:
I just wanted to, I know we've grouped this into new, this new bucket structure that we have. But, are we going to be explicit about the risk allocation, like the risk bucketing for each of those buckets? I mean, we're calling one growth and one real and one inflation-linked. But, are they going to have explicit risk allocations that we the board will be able to provide direction on?

Joseph Dear:
Those already exit. Will they be modified when we change the classification, or were just adapted?

Farouki Majeed:
And I think you asked this question before, as well, when we presented the alternative. What would this look like in terms of performance? And we gave you some sample reports. So, I think that kind of reporting going forward will change because we'll be reporting …

Joseph Dear:
Well we have risk limits in our current policy tied to asset class. We're going to change in the classification?

Priya Mathur:
We did.

Farouki Majeed:
No. So I was going to get to the risk thing.

Joseph Dear:
Okay.

Farouki Majeed:
In just a minute, Joe.

Joseph Dear:

Please.

Farouki Majeed:
So, one is, so the performance and so on will be shown on these buckets and what's contained in there in terms of individual portfolios. And the other one, in terms of the risk, you know, we, we show risk in our risk reports what we're going to try to do is to get below the market risk measures that we showed total fund. And, I think what you will see is allocations, what is your risk exposure to growth? So those things that we can show.

Priya Mathur:
I guess what I'm trying to get at is, is will we have sort of similar to the way we have allocation targets with ranges, are we going to have risk targets for each of these buckets with ranges around them? That we're giving, suppose. Because it seems to me that in the past we've made certain assumptions about what the risk level of fixed income is, the risk level of real estate is, but then the way we have actually implemented those asset classes has deviated quite a lot from the way the market in general views them. And, so, and I just want to make sure that we are being explicit about our assumption of risk in these asset classes as opposed to defaulting to something that we the board haven't given real direction around.

Joseph Dear:
Well, we currently express the risk. In terms of tracking error. And that's the tool we basically have. Which is the volatility measure. So we have that.

Priya Mathur:
Overall.

Joseph Dear:
And, and will we in the very short term amplify this with the liquidity risk and the grown risk? No. Not immediately. But, a lot of work is in process to enable us to improve that. Not least of which is bringing up the new risk management system, which is in the final stages of procurement. So we're about to add a significant tool set. Again, going back to yesterday's discussion. Part of what the new classification affords us is a way of talking about this growth risk exposure. You know. Let's not delude ourselves here. This protection against that kind of risk comes at a cost. You have indicated a preference for a portfolio at about the same level or risk we have now. If we are to employ some of these tools reducing the exposure to growth risk and increasing the downside protection, the cost of that is expected return. Which translates immediately, for almost immediately into contribution rate impacts. So, part of our freedom of movement is constrained depending on how you rate, weight those various considerations. But all of this can become much more visible in these reports. Even if you don't, even if we don't make major changes in the near term in terms of.

Priya Mathur:
Right. But at a, so at a policy level we're making sort of, I found, explicit decision about volatility at the portfolio level, but right now we don't have that at the bucket level. And I'm wondering if that is something …

Joseph Dear:
But we're working to that. Yeah. We've got … okay.

Priya Mathur:
You're working to that. Okay. I just want to make sure.

Joseph Dear:
Yeah, we'll get … hmm-hmm.

Priya Mathur:
I, maybe I didn't quite get that one.

Joseph Dear:
Right. Cause I don't want to tell you it will be ready on Thanksgiving when I don't think it will be.

Priya Mathur:
Right. Okay.

Farouki Majeed:
So may I elaborate a little bit on that? Is, the implementation risk bucket is something that we figure in asset allocation policy, as I mentioned, that we intend to bring that back to you in Q-1. That will have a certain risk implementation, the active risk target for the total fund. And we have had some discussions about having that framework for the asset classes as well, if that's what you are talking about. So that may allow us to better show those types of active risks in the individual buckets and portfolios. But we haven't yet gotten there.

Priya Mathur:
Okay. I, just to Pat's point. I'm wondering if maybe we ought to bring back A-7 and A-8 as opposed to just A-8?

George Diehr:
Those are added options. Yeah.

Priya Mathur:
It does that (indiscernible 00:47:36).

George Diehr:
Yeah. Yeah, it does. Pat?

Patricia Clarey:
Thank you. Actually, I'd be a lot more comfortable with getting both A-7 and A-8. I think that's a great suggestion.

George Diehr:
Yeah. All right. Anymore comments from anyone on this? We have, Joe, do you have the recap, next steps, that?

Joseph Dear:
Yes, sir. First, I'm going to thank the board for your attention to the past day and a half, and your participation, and the questioning and probing, and the, your wisdom in trying to navigate among a set of very difficult choices. So, thank you. I thank the audience for putting up with this, and we try to make this as public and as transparent a process, and what makes that real is your presence here. So I want to thank those members of the audience. Some have traveled for some distance to join us. And I want to repeat thanks to the staff, who distilled a lot of work that we began early this year led by Farouki, but with Rick Roth, Ray Venner, Lorne Johnson, Jay Jeong, D & G helped with the logistics. Sharon Noss is already gone to start working on next weeks investment committee meeting, but she's indispensible. And, Jeanette Ayubi for her staff work, and whom I … I think I got most of the staff. This is, as I said yesterday, Mr. Chairman, much more of a beginning than an end in terms of reorienting how we think about risk in the portfolio and applying a new set of frameworks to that task. And it opens up a lot of possibilities in terms of how we navigate going forward. And that is the real journey. And what we've done now is taken a turn that I hope will allow CalPERS to reclaim its reputation as a thought leader in this industry, and to apply the best thinking with the staff of the folks we are advised by, with reference from Wilshire and PCA and apply our best judgment to a set of really challenging questions about how to fulfill the promise that we've made to our beneficiaries for their retirement security. And I want to thank everyone then for a really productive discussion.

George Diehr:
Thank you. And I want to thank the staff also. A excellent job of, and consultants, and both presenters, and non, and the audience also. And, I agree, this is a first step. Every, every time we do this it does get better despite our pushback. But I think the, it shows the board is paying attention and engaged in the process. And we look forward to the, to the next steps. So, yeah, thanks, and I guess we will adjourn this meeting.

Farouki Majeed:
Thank you.

End of Segment 6.